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SOVIET ECONOMIC GROWTH

Proposed Presentation to the

Naval War College

C[illegible]conomic Research
24 August 1970

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Soviet Economic Growth

Introduction

Why are we interested in the Soviet economy? First of all, because it represents a military challenge to the United States. Secondly, because the Soviet model of development has spread to many other nations. Today, over one billion two hundred million people -- or roughly one out of three on the earth's surface -- live under the economics of Karl Marx or some variant of this doctrine. More importantly, the doctrine is being hawked to the newly-emergent nations as a development model superior to anything the West can offer.

Yet after 53 years of Communist stewardship, the USSR presents a mixed economic picture. Overall, the economy continues to expand, supporting rapid industrialization and the maintenance of a military-space sector that produces end products in sufficient quantity and quality to represent a formidable challenge to the United States. Together with this success, however, we find:

1. An array of engineering industries turning out equipment which, in quantity, is close to that of the United States but is generally far outdated in technology.

2. A civilian goods component whose output is relatively small, and whose products -- from automobiles to washing machines -- is unsurpassed among the advanced economies of the world for shoddiness, bad design, limited variety and short service life.

3. And finally, an agriculture which, in important respects, still resembles that of under-developed nations, despite recent improvements.

Doctrine

Today I propose to examine the growth of the economy with special attention to those underlying factors which will determine in large measure its prospects in the years ahead.

You are all familiar with the fundamental Soviet economic doctrine, namely, forced draft industrialization. It was put into effect with the start of the first Five-Year Plan in 1928, and it remains a basic tenet today. Priority development of heavy industry not only permitted rapid economic growth, but also provided the sinews of the Communist war machine. As a consequence, consumption, or what the consumer received, was looked upon as a residual. The centralized allocation of resources left the mass of the population with only enough food, clothing and shelter to permit the work process to continue. Up to the present, Soviet economic policy has achieved its goal of rapid growth. The USSR boasts the

second largest economy in the world. But the Soviet people have paid dearly in terms of material well-being and political oppression.

Moreover, Soviet leaders are discovering that the methods used for forced industrialization are increasingly ill suited for the management of a complex, modern economy. The highly skilled, technical labor force now required is more motivated by incentives than by coercion. This means, in turn, that consumers can be no longer treated as residual claimants. Furthermore, with the accelerating forward sweep of industrial technology planners must be increasingly flexible and adroit. Yet, Soviet response to these growing pains have been timid, half-measures that have brought some relief but have not attached basic ills. Even these measures have had to overcome the opposition of entrenched, vested interests among the various production ministries and the party. Planners tend to emphasize the same old things -- steel, heavy industry, general-purpose machine tools. To maintain the quality of growth, resources need to be increasingly diverted to new areas -- petrochemicals and plastics, electronics and computers.

Where has forced draft growth brought the USSR in its self-appointed task of becoming the world's strongest nation, in an economic sense? Let's look at a few statistics on recent comparative performance, namely, the Soviet and US records from 1950-69.

Table/
Slide #9

Briefing Aid

US and USSR: Comparative Gross National Product

1. In the slide, Soviet GNP expressed in dollars is obtained in three steps. First, the ratio of Soviet and US GNP's based on ruble prices is calculated. Secondly, a similar ratio based on dollar prices is computed. Finally, US GNP in dollars is multiplied by an average of the two ratios. The valuations of the two countries' GNP's would be substantially different if expressed in rubles or in dollars. The difference arises from the wide variations in the patterns of output and relative prices in the two countries.

2. Neither valuation can be said to be "more accurate," or "preferable;" there is nothing inherently "good" or "bad" in the price relationships of one or the other country. We use a comparison based on an average of the ratios calculated, alternatively, in rubles and in dollars. We believe this provides a better measure of the relative production capabilities of the two economies than is given by either valuation alone.

3. We can note that the size of Soviet GNP is about one-half that of the United States. But because of the much larger total size of the US GNP, the absolute gap between the US and Soviet GNP's has increased in the 1960's. This has been true even though the Soviet economy has been growing more rapidly than that of the United States.

I should note that the USSR does not employ the Western concept of gross national product, so the comparisons you have seen are reconstructions made by CIA economists. Similarly, the Soviet concept of industrial production is not comparable to any Western series, so that we have had to build up an aggregate measure of industrial output, using techniques as close to the US Federal Reserve Board series as possible. This is what the data show.

Table 2
Slide #31

Briefing Aid

US and USSR: Industrial Production

1. This slide is on an index number basis, with 1960 equal to 100 in both countries.

2. Over the years, the rapid growth of the Soviet economy has been sparked by sharp increases in industrial production, which more than quadrupled in volume over the 19-year period (1950-1969), in comparison to a doubling in the US.

3. Since 1960, however, industrial production in the US has been growing more rapidly than in the 1950's, while the opposite is true of the USSR. As a result, the difference between US and Soviet industrial growth rates has narrowed. This deceleration of growth in Soviet industry has been a matter of serious concern to the leadership.

Agriculture

Notable, but much less spectacular, has been the growth of Soviet agricultural production, which nearly doubled from

1950 to 1969 while that of the US increased by 40 percent. The US, of course, has not been trying to increase agricultural output very much, so the growth comparison is somewhat unfair. If we measure the performance of Soviet agriculture in terms of relative costs and efficiency, its record is a dismal one. With an agricultural labor force 10 times the size of that in the US, Soviet agriculture in 1968 produced commodities whose total value was only about three-quarters of US agricultural output. In the USSR, one person in the agricultural labor force feeds five others in the total population; in the US the ratio is 1 to 52!

I have a graph to show you.

Table 3
Slide #35

Briefing Aid

US and USSR: Percent of Labor Force in Agriculture

1. You can see that about one-third of the Soviet labor force (32 percent) remains on the farms. Although there has been significant improvement since 1950, one-third is a higher percentage by far than exists in any other industrialized nation.

2. Despite relatively heavy capital investment -- 18 percent of the total in the USSR vs. 4 percent in the US -- the withdrawal of manpower from farms is now relatively slow.

From the time of the Revolution, Soviet regimes have been plagued by the problem of assuring an adequate supply of

foodstuffs. Located at relatively high latitudes -- Moscow is 55° North, on roughly the same parallel as the middle of Hudson's Bay -- the USSR has harsh winters and short growing seasons over vast areas. Moreover, only 11 percent of this huge land mass is arable. There is a continuing premium on efficient management in agriculture and on investment programs that will make possible maximum exploitation of the country's marginal agricultural resources.

Where do they stand today? The Soviet diet is adequate in calories, but it is heavily weighted to bread and potatoes. So-called quality foods -- meat, fruits, milk -- are always in short supply by Western standards. Production of grains during the past decade has expanded at average annual rates of about 3 1/2 percent a year, but the increase has been attended by considerable annual fluctuations attributable in large measure to weather conditions. In 1969, for example, the grain crop was plagued by bad weather throughout the crop season, but nevertheless turned out to be the third largest on record. Because of very good weather, crop prospects for 1970 are excellent. Indeed, grain output is likely to surpass the record 1966 harvest.

Allocation of Output

Let's turn now from overall measures of output to its allocation.

Table 4
Slide #20

Briefing Aid

US vs. USSR: Consumption, Investment, Defense

1. This chart compares outlays for consumption, investment and defense in the US and USSR for 1950, 1960, and 1969.

2. At the left, you can see the priority given in the US to consumer welfare, and the huge margin of material superiority our citizens enjoy compared to those in the USSR.

3. Next, the investment comparison underscores the Soviet emphasis on growth; it is the most spectacular comparative increase on the part of the USSR -- from about 25 percent of the US in 1950 to nearly 85 percent of ours in 1969.

4. Finally, Soviet defense outlays, shown on the far right, are now about three-fourths as large as ours. Soviet defense outlays, as you can see, have been high throughout this period.

What the Soviet allocation pattern shows is that personal consumption has fallen slightly as a share of GNP. Consumers received somewhat more (including better health and educational services) over the years measured in absolute terms. But by 1969, Soviet citizens were getting only 58 percent of total output.

A major shift in allocation has occurred in defense. While military spending has increased over the years, the military share of total output has been declining. In 1969,

when Soviet GNP was 3 times as large as in 1950, expenditures on military and space programs were up only 43 percent. As a consequence, the share of GNP devoted to defense and space programs has decreased from 14 percent in 1950 to 8 percent in 1969.

Where has the lion's share of output increases been going? To investment. New fixed investment is up, as a share of GNP, from 12 percent in 1950 to 26 percent in 1969. And industry has been receiving the largest slice of the investment pie.

Despite the sharp increase in investment funds, growth rates in industry began to decline in the late 1950's. The primary reason for this was a cut in the manpower input as a result of the cut in the work week from 46 to 41 hours. Total manhours worked actually declined from 1956 to 1960. However, after 1960 the growth of manhours rose sharply, but the rate of growth of GNP has not regained its earlier vigor.

The Slowdown of the 1960's

We think one of the reasons for the slowdown in the 1960's has been the rise in those defense outlays which have a high technology content, particularly the demand for advanced military equipment and research and development in the military-space sector. I will return to the defense impact later. But let us note at this juncture that these

advanced military-space programs, growing rapidly, skimmed off the best available facilities, scientists and engineers, and almost certainly had a qualitative effect on civilian technology and investment programs.

But the fundamental problem, we believe, lies elsewhere. With investment and labor force increasing rapidly, why has not output responded in the 1960's as it did in the 1950's? What this means is that there has been a sharp decline in the gains attributed to factor productivity. In other words, it requires a significantly greater increase in capital and labor to bring about the same increase in industrial output in the 1960's than in the 1950's. Let's look at some figures.

Table 5
Slide #33

Briefing Aid

USSR: Productivity Increases, 1951-69

1. You will note from the left hand bar that from 1951 to 1960, the annual rate of increase in Soviet industrial output was about 9 1/2 percent. About half of this increase was due to inputs of capital and labor, and half to productivity increases.

2. The three bars to the right summarize the situation, respectively, in 1961-65, 1966-68, and 1969. You can see that labor and capital inputs continued to grow at about the same rate as in 1951-60, but that factor productivity declined very sharply. As a consequence, annual growth of

industrial output was cut from about 9 1/2 percent to between 5 percent and 7 percent.

What are the primary reasons for increases in factor productivity? I have a chart for you.

Table 6
Slide #36

Briefing Aid

Some Reasons for Increased Efficiency in Resource Use

[READ]

With respect to some of the key building blocks of productivity, such as the education and training of the work force, the rate of advance in the USSR in the 1960's was not very different from that in the 1950's. Also, trends in the quality of industrial materials have not altered significantly. The key to the low efficiency that we noted in Soviet industry lies in the lack of progress in the closely intertwined elements of economic management, improved production techniques and the introduction of new technology.

To illustrate, we can use machine tools as an example. The central planners have deliberately continued to schedule a heavy volume of production of general-purpose machine tools instead of switching to smaller numbers of the more complex and expensive -- but much more efficient and productive -- special-purpose machine tools. They also continue to emphasize the use of metal-cutting machine tools in many manufacturing operations where we have long switched to metal-forming machine tools that are faster in operation, generate less scrap, and

are capable of turning out functionally superior products. Numerically controlled machine tools account for only one percent of Soviet machine tool output, and their use is largely confined to the aerospace industry. In contrast, in the US such units account for 20 percent of machine tool production; and they are widely used throughout industry. Of course, the more sophisticated units would require new design work of a high order -- something that causes Soviet industry considerable grief. The road of least resistance has been continued production of general purpose units, many of them of mediocre quality.

"Well then," you may ask, "if rapid increase in productivity occurred under such a policy in the 1950's, why not in the 1960's?" First, there is a general tendency toward diminishing returns to additional inputs of capital and labor of given type and quality. When production has been severely disrupted and much of the country's plant destroyed or damaged as during World War II, almost any kind of equipment can be put to work and yield relatively large gains in output. Later, as industry is more fully equipped and is called on to produce a wider variety and higher quality of product, more of the same old-style equipment will contribute relatively little to raising output. Better planning, better management, and better technology are needed.

The Role of R&D and Imports

One way to help overcome the technology problem is to increase imports of Western technology -- not only plants and equipment but also process licenses and patents. The Soviets have been expanding their imports from the West for the past decade, and this helps in limited areas, but not across the board.

For example, the Soviets are finishing construction of an automobile plant on the Volga. It is essentially a FIAT-equipped facility, which will raise the technological level of the Soviet automobile industry sharply for a few years. But by the time the plant reaches maximum planned output, the car being produced will already be semi-obsolescent by Western standards, and by 1975 it will be unmarketable in competition with Western automobiles. There will be no Soviet follow-through to keep the technology up-to-date; they will be turning out the same old FIAT.

A second attack on the problem of lagging technology is to beef up the domestic research and development effort. Despite the Soviet buildup, the US civilian R&D effort is 2 1/2 times the size of the Soviet counterpart. Not is the flow of home-grown R&D products from Soviet institutes impressive.

Where the Soviets stand in technology is shown on the following slide.

Table 7
Slide #37

Briefing Aid

Relative Levels of Technology in the Mid 1960's

1. This slide is a comparison based on total output, or GNP, using the United States as a norm of 100. The first column shows that output per unit of capital and labor is about one-third that of the US, and while about equal to that of Italy, is significantly behind that of Northwest Europe.

2. The Soviets' relative position doesn't change appreciably if the comparison is made on the basis of GNP generated per worker -- the second column.

3. Finally, the capital stock available per worker has a long way to go before it reaches the US level, and still lags well behind the advanced Western European nations.

Soviet technology is probably ahead of the US in a few military related areas, such as rotor systems for large helicopters. It is in the military areas that industrial technology as a whole comes closest to the West, with heavy industry occupying a middle ground and civilian goods the bottom of the scale. The chart you have just seen includes agriculture, which pulls down the overall level of Soviet technology.

The Burden of Defense

I turn now to a brief comment on the burden of defense. The persistent military competition with the West has been

and continues to be a factor retarding Soviet growth. In an economy as taut as the USSR's -- where plant, equipment, and skilled manpower of all kinds are in short supply -- military programs represent a direct drain of resources away from alternative uses. I have a few figures to show you.

Table 8
Slide #34

Briefing Aid

Soviet Expenditures for Defense and Space

1. The top line on this chart is a reconstruction, in rubles, of what we believe the USSR actually spent on defense. It is substantially higher than the one line figure for "defense" carried in the Soviet open budget.

2. After the Korean War, total defense expenditures in the USSR declined somewhat, thereby helping a boom in investment in the civilian sector in the mid-1950's. After 1960 they jumped sharply, only to level off again in 1963-65. Expenditures for defense and space spurted again in 1966-69, and now stand at an all-time high.

The impact of military and space programs falls predominantly on Soviet industry and in particular on the machinery sector of industry. In 1969 procurement of military machinery and equipment claimed 21 percent of machinery output, and in certain key areas such as electronics, the share of output channelled into military and space programs was far greater.

The impact of the military and space programs is heightened by the fact that about three-fourths of the Soviet research and development establishment is engaged in military and space projects.

Although these are significant costs, the burden of the Soviet military and space programs should also be appraised against the background of a rapidly increasing national product. Current expenditures on military and defense programs of about 22 billion rubles represent a very large diversion of resources from the civilian sectors of the economy, but the change in the overall share of GNP over time suggests that the relative burden is not as critical as it once was. The Soviet GNP is now so large that even moderate rates of growth should provide the leadership with a fair amount of leeway to increase defense outlays. I have a few figures.

Table 9
Slide #38

Briefing Aid

Declining Share of Defense and Space in GNP

This chart shows the declining share of defense in total Soviet GNP. You can see that, in the aggregate, the military claim in total output is holding steady at about 8 percent, compared with 15 percent in the 1950-52 period.

The Soviet Consumer -- Present and Future

Before saying a word or two about the future of the Soviet economy, we need to review, very briefly, the lot of the consumer. We can start with the basic data.

Table 10
Slide #13

Briefing Aid

US vs. USSR: Major Consumption Categories

1. These two circles represent the division of consumption expenditures in the US and the USSR. While they have been drawn equal in size, we should first remember that, in total, the Soviet consumer receives goods and services which equal one-third of those flowing to his US counterpart.

2. As you can see, the pattern of consumption in the USSR differs markedly from that in the US. Food and clothing take the major share -- 64 percent of the total, and food alone accounts for nearly 50 percent. Despite marked improvement in the post-Stalin period, the Soviet diet is still heavily loaded with bread and potatoes. Supplies of shoes, clothing, and other soft goods are increasing, but their quality and variety in no way match those in the West.

3. Because such a large proportion of the Soviet consumption ruble is allocated to the basics of living, much less is left for durable goods anf for services -- things that add so much to our convenience and comfort. Note, for example, the contrast in consumer durables, where the Soviet share of total consumption is only one-quarter that in the US, and in housing, where the Soviet share is a little over half the share in the US pattern.

Probably the best way to review the consumer goods problem is to look at the comparative data on stocks, since annual production adds only a small fraction to available numbers. We have this on our next slide.

Table 11
Slide #14

Briefing Aid

US vs. USSR: Stocks of Durable Goods

1. These numbers reflect units of the various consumer durables shown per 100 people. You can see that, with one exception, sewing machines, the Soviet consumer has relatively little. The large stock of sewing machines in Soviet homes reflects the primitive nature of their ready-to-wear clothing -- shoddy, expensive, and often not available.

2. The pent-up demand for many durables -- but particularly automobiles -- reflects a supply situation far worse than in the Communist countries of Eastern Europe. Even preferred classes of citizens such as scientists and engineers have to wait literally for years, after getting on factory lists, to receive a new automobile.

The Future

And now, a few words on the future. I began the presentation by saying that we are interested in the Soviet economy primarily for two reasons:

1. Its military challenge to the US; and

2. its attraction to developing countries.

Can the challenge continue? Looking forward to the years between 1970 and 1975, we would expect the Soviet economy to grow at about 5 percent a year. Although this would be far below the rates achieved during the 1950's, it would be nevertheless, a good rate of growth. This rate could be somewhat higher in very good agricultural years and less when crops are poor. Such variations must be expected, given the precarious nature of Soviet weather.

A 5 percent rate of growth clearly can provide the resources for an increasing military effort, a rising level of living, and an expanding industrial base. Despite the promise of continued growth, the economy is not sufficiently developed to provide the various claimants with all they want. Just as in our country, Soviet leaders debate on how the economic pie is to be divided. Except for agriculture, the results of the current debate -- the five-year plan for 1971-75 -- have not been announced. The agricultural goals, however, do give us a clue as to future priorities. Investment in agriculture is scheduled to grow at a more modest pace than proposed for or even achieved in the current five-year period. It appears likely, however, that agriculture's share of total investment is continuing its slow growth. The goals for agricultural machinery and farm chemical also are in line with recent trends, suggesting that, overall, there will be no major shift in resource allocation in favor of

agriculture. Thus, the plans for agriculture are in line with Brezhnev's bent for making changes at the margin rather than drastic changes in priorities. We, therefore, expect that in 1975 the shares of GNP going to investment, the military, and the consumer will be about the same as they are today.

As a model of development, the Soviet economy can now be faulted seriously. In the early stages of development, the marshalling of all resources by the communist state and the iron fist of control can move a backward economy forward. But what Soviet experience now seems to say is that when a stage of near-maturity is reached, communist dogma is of no appreciable help in achieving further meaningful growth.

In terms of quality, in percentage achievement, Soviet growth may be quite respectable by Western standards. But what about quality? Can the Soviet Union make substantial progress in accelerating the development and application of new technology? We think not. Our studies show that, during the decade of the 1960's, the technological gap between the USSR and the West was not only large, but probably was widening as the pace of change quickened. Therein lies the real economic challenge to communism -- will it overhaul its outmoded system of planning and economic administration to compete in the technological race?

Such an overhaul would require the loosening of the reins of central control. To date the political cost of such a move has been unacceptable. In the future, however, as the USSR falls further behind the West, the pressure for change is bound to mount.

Table 1

Slide #9

The Gap Between the United States and Soviet GNP's has Increased in the 1960's

(Billion 1969 US$)

	United States	USSR	Absolute Difference
1950	452	154	298
1955	561	216	345
1956	571	324	247
1957	580	245	335
1958	573	266	307
1959	610	277	333
1960	624	288	336
1961	637	308	329
1962	678	324	354
1963	706	333	373
1964	744	358	386
1965	791	380	411
1966	844	404	440
1967	865	429	436
1968	906	455	451
1969	931	475	456

The Difference Between United States and Soviet Industrial Growth Rates has Narrowed

Index numbers: 1960 = 100

	United States	USSR
1950	68.9	39.9
1951	74.8	45.8
1952	77.6	48.7
1953	84.0	53.1
1954	78.9	59.2
1955	88.9	66.7
1956	91.9	72.8
1957	92.6	78.2
1958	86.2	85.8
1959	97.1	93.2
1960	100.0	100.0
1961	100.9	107.5
1962	108.8	116.5
1963	114.4	122.8
1964	121.7	130.0
1965	131.9	137.9
1966	143.8	148.1
1967	145.4	159.0
1968	152.3	168.3
1969	159.0	177.2

The Share of the Total Labor Force Still on Soviet Farms Remains Large

	Percent of total labor force	
	United States	USSR
1950	15.9	54.0
1951	15.3	NA
1952	14.7	NA
1953	14.1	49.9
1954	13.5	NA
1955	13.5	49.9
1956	11.7	49.7
1957	11.4	48.3
1958	11.1	47.0
1959	10.8	45.1
1960	10.2	42.4
1961	9.8	40.2
1962	9.5	39.2
1963	9.0	38.4
1964	8.3	37.5
1965	7.5	36.9
1966	6.9	35.3
1967	6.3	34.9
1968	6.0	33.3
1969	5.6	32.4

Allocation in the United States Favors Consumption;
In the USSR, Investment and Defense

(Billion 1969 US$)

	Consumption		New Fixed Investment		Defense	
	US	USSR	US	USSR	US	USSR
1950	305	82	93	23	25	46
1960	427	156	112	77	60	47
1969	630	250	162	137	81	66

A Slowdown in Productivity Highlights the Lower Growth Rates in Soviet Industry

	Average annual rates of growth (percent)*		
	Total Industrial Production	Inputs of Labor and Capital	Factor Productivity
1951-60	9.6	4.8	4.6
1961-65	6.6	5.1	1.4
1966-68	6.9	4.7	2.1
1969	5.3	4.5	0.8

* Ratio scale.

Some Reasons for Increased Efficiency in the Use of Resources. . .

-- Economies of scale resulting from specialization and division of labor

-- Better trained, more efficient labor resulting from higher levels of education and improved general health

-- Improved quality and supply of materials used by industry

-- Improved quality of plant and equipment (not already accounted for as input of capital)

AND LAST BUT NOT LEAST,

-- Better economic management, improved production techniques, and introduction of new technology

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Table 7 ~~SECRET~~ Slide #

Relative Levels of Technology in the Mid-1960's

	GNP Per Unit of Capital and Labor	GNP Per Worker	Capital Stock Per Worker
United States	100	100	100
Northwest Europe	55	48	45
Italy	35	33	31
USSR	34	33	31

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Expenditures for Defense and Space
Spurted again in 1966-69

Year	Estimated Expenditures	Announced Defense Budget
	Billion rubles	
1950	12.99	8.28
1951	15.30	9.34
1952	15.97	10.86
1953	15.41	10.50
1954	15.69	10.30
1955	16.73	10.74
1956	16.04	9.73
1957	15.16	9.12
1958	15.22	9.36
1959	15.43	9.37
1960	14.72	9.30
1961	15.74	11.59
1962	17.17	12.64
1963	17.40	13.87
1964	17.56	13.28
1965	17.58	12.78
1966	18.74	13.40
1967	19.90	14.50
1968	20.61	16.70
1969	21.55	17.70

Table 9 ~~SECRET~~ Slide #38

The Share of GNP Devoted to Defense
and Space Programs
has Decreased

	Percent		Percent
1950	14.1	1960	8.9
1951	16.3	1961	9.0
1952	15.7	1962	9.5
1953	14.5	1963	9.4
1954	14.0	1964	8.8
1955	13.6	1965	8.4
1956	11.9	1966	8.4
1957	10.8	1967	8.5
1958	10.0	1968	8.3
1959	9.7	1969	8.5

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Food and Clothing Take the Major Share of
Soviet Consumption Expenditures

	1969 (Percent of Total Consumption Expenditures)	
	United States	USSR
Food	19.3	45.9
Apparel and other soft goods	17.5	18.2
Services	35.2	25.5
Housing	13.3	6.8
Consumer durables	14.0	3.5

Stocks of Durables are Far Below US Levels

	1968 (Units Per 100 People)	
	United States	USSR
Refrigerators	24.4	5.8
Washing machines	20.7	10.6
Radios	145.0	18.6
Television sets	42.0	11.2
Automobiles	41.2	.5
Vacuum cleaners	27.5	2.5
Sewing machines	13.6 a/	15.4

a/ For 1963, electric only.